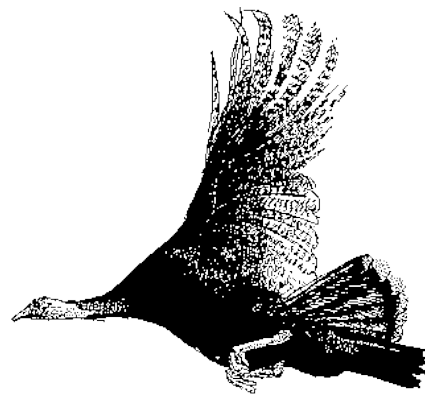

Activities and Satisfactions of Fall Turkey Hunters in New York State



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This publication is one of a series of reports resulting from investigations dealing with public issues in environmental and natural resources management. The Human Dimensions Research Unit (HDRU) in the Department of Natural Resources at Cornell University studies the social and economic aspects of natural resources and the environment and the application of social and economic insights in management planning and policy. A list of HDRU publications may be obtained by writing to the Human Dimensions Research Unit, Department of Natural Resources, Fernow Hall, Cornell University, Ithaca, NY 14853, or by accessing our World Wide Web site at: <http://www2.dnr.cornell.edu/hdru>.



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EXECUTIVE SUMMARY

In 2013, the New York State Department of Environmental Conservation (DEC) sponsored two statewide surveys to improve understanding of the activities and interests of New York State turkey hunters. Results from turkey hunter surveys will be considered along with findings of biological research (i.e., DEC-sponsored research on turkey survival rates, turkey harvest rates, and turkey harvest potential in different landscapes) as managers update the 2005 wild turkey management plan.

This report describes results from the second hunter survey, which focused on fall turkey hunting activities and satisfactions in New York State.

Study purpose: Collect information necessary to consider conditions that contribute to turkey hunter satisfaction with the quality of fall turkey hunting in New York. This information will be used to inform decisions for setting fall hunting seasons (e.g., season timing, season length).

- Research objective 1: characterize fall turkey hunters and their activities.
- Research objective 2: determine conditions that contribute to fall turkey hunter satisfaction and rank these conditions to determine their relative contribution to perceived quality of fall turkey hunting among subgroups of fall turkey hunters in New York.

METHODS

Sampling

- NYSDEC provided access to a listing of all 2011–12 turkey permit holders in New York, from which we drew a stratified random sample of 6,250 hunters between the ages of 18 and 80.
- We drew a random sample of 1,250 hunters per stratum in five geographic areas corresponding to fall turkey hunting zones (i.e., (1) Lake Plains, (2) Northern New York, (3) Southeastern New York, (4) Western New York, and (5) Long Island).

Mail survey instrument

- To characterize turkey hunters and their activities (objective 1), we assessed: hunting effort and practices; methods and equipment used; harvest success; type of land hunted, motivations for hunting only the spring or fall season, overall satisfaction with fall turkey hunting experiences in the last year hunted, and change in level of satisfaction over the last few years.
- To determine and rank conditions that contribute to turkey hunter satisfaction (objective 2), we assessed the importance of multiple conditions pertaining to seeing/hearing turkey, harvest success, contact with other hunters, turkey available for harvest, turkey hunting opportunity, and consistency in fall regulations. Hunters were asked to rate how important each condition was to their satisfaction with the quality of fall hunting in New

York State (scale 0–4; 0 = not important, 4 = very important). Then, the 28 individual conditions were aggregated into six dimensions of hunting satisfaction, and hunters were asked to rank the dimensions from most important (ranking = 1) to least important (ranking 6) in determining their personal satisfaction with the quality of a fall turkey hunting experience in New York State.

Survey implementation

- The Survey Research Institute at Cornell University (SRI) implemented the survey mailings between March 4, 2013 and March 29, 2013. Each member of the sample was contacted up to four times.
- SRI completed telephone interviews with 50 non-respondents in each stratum (250 interviews total). HDRU provided SRI with contact information for all nonrespondents. From that group, SRI randomly selected 1,264 hunters to be contacted by phone. Data collection began on April 15, 2013 and was completed on May 16, 2013. Calls were made until the target number of 50 interviews per strata was completed. Interviews were approximately 5 minutes in duration and obtained data on eight topics explored in the mail survey.

Weighting the data:

- We sampled an equal number of turkey hunting permit holders in each geographic stratum (n=1,250), even though permit holders are not equally distributed across the state. This raises the possibility of sampling bias. To address that possibility, we developed weighting factors for each geographic strata, and we applied those weight factors based on county of residence.

Findings Highlights

- A total of 2,508 questionnaires were returned (41% response rate).
- 27% of respondents reported that they had *never* hunted turkey (i.e., they had received turkey-hunting privileges as part of the hunting license they purchased, but never used those privileges). Respondents who had *never* hunted turkey were not included in the analysis.

Nonrespondent–respondent comparisons

- About the same proportions of respondents and nonrespondents had hunted turkey at some time, and both groups reported similar *trends* in level of satisfaction with fall turkey hunting New York over the past few years (i.e., similar proportions of respondents and nonrespondents said that their level of satisfaction had increased or decreased over the last few years).

- Nonrespondents were less likely than respondents to have hunted turkey in 2012 (56% vs. 74%). Nonrespondents were younger than respondents on average (mean age 48.9 vs. 54.5 years), had hunted fewer days in fall season (3.5 vs. 4.1), and had hunted fewer years in New York (8.5 vs. 11.1). Nonrespondents were more likely than respondents to say that they were moderately or very satisfied with their most recent fall turkey hunting experiences (65% vs. 41%).

Involvement in fall hunting seasons:

- Over the last 3 years, fall turkey hunters spent an average of 7 days (range 1 to 52 days) hunting during fall seasons.
- A majority (54%) of respondents said that the number of days they hunted turkey during the fall had remained about the same over the last three years; 36% had decreased the days they spent turkey hunting in the fall; only 10% had increased their days of fall hunting.
- Approximately 74% of respondents who had gone turkey hunting in NYS at some time went turkey hunting at least once in NYS in 2012. Of those who hunted in 2012, about 57% had hunted both the spring and fall seasons; 34% had hunted only the spring season; 9% had hunted only the fall season.
- Approximately 8% of those who hunted in the 2012 fall season bagged a turkey in the fall (ranging from 3% in the lake plains region to 20% in northern New York).
- Most (71%) turkey hunters used shotguns on every hunt when they were exclusively pursuing turkeys. A majority of respondents who had hunted turkey in fall 2012 at least occasionally (1) bow hunted for deer and fall turkey at the same time (62%), or (2) hunted for small game and fall turkey at the same time (55%).
- Most fall turkey hunters (87%) reported hunting mostly or only on private land in 2012.

Overall satisfactions with fall turkey hunting:

- Respondents who had hunted during a fall turkey season in New York at some time in the past were asked how satisfied they were with their fall turkey hunting experiences in their most recent year of turkey hunting. Forty-one percent of those hunters were moderately or very satisfied with the last fall season they had hunted in New York; 39% were neither satisfied nor dissatisfied and 20% were moderately or very dissatisfied. Level of satisfaction with one's most recent fall turkey hunting season in New York did not differ by region hunted.
- Most (59%) of those who hunted turkey in the fall reported that their level of satisfaction with their fall turkey hunting experiences had stayed the same over the last few years; 14% and 28% reported that their level of satisfaction increased and decreased, respectively. Change in satisfaction did not differ by region hunted most often.

- Among hunters who reported that their satisfaction with fall hunting had *decreased*, the most important factors contributing to decreased satisfaction were “change in turkey numbers in the area where I hunt,” and “change in the rate at which I encounter and have a change to bag a turkey (i.e., harvest opportunities).”

Ratings for conditions that may affect fall hunting satisfactions:

- Hunters were asked to rate how important 28 conditions were in determining their satisfaction with the quality of fall turkey hunting in New York State. Specific conditions were listed under six headings: hearing/seeing turkey before and during the fall season, opportunity to be in the field in the fall, number of turkey available for harvest, harvest success during the fall season, contact with other hunters during the fall season, and consistency/uniformity of fall regulations. A majority of respondents considered 13 conditions to be moderately to very important to their satisfaction. That included:
 - five conditions related to hearing/seeing turkeys,
 - seeing flocks of turkey
 - finding/seeing turkey sign
 - hearing turkey
 - seeing gobblers
 - knowing friends/family are hearing or seeing turkey
 - five conditions related to opportunity to be in the field,
 - having hunting places on private land
 - having places to hunt close to home
 - a season length that allows plenty of hunting opportunities
 - a season length that includes 2 or more weekends
 - avoiding overlap between fall turkey and firearms deer seasons
 - One condition related to number of turkey available for harvest,
 - the number of turkey available to hunt in the fall
 - One condition related to contact with other hunters,
 - not seeing or encountering other turkey hunters outside my group
 - One condition related to consistency of fall regulations
 - Avoiding fall regulation changes from year to year.

Rankings for conditions that may affect fall hunting satisfactions:

- We aggregated 28 individual conditions into six dimensions of hunting satisfaction, and asked hunters to rank the dimensions from most important (ranking = 1) to least important (ranking = 6) in determining their personal satisfaction with the quality of a fall turkey hunting experience in New York State. The top-ranked conditions that contributed to satisfaction with fall turkey hunting in New York State were: (1) how often hunters heard or saw turkey, (2) overall opportunity to be in the field, and (3) number of turkey

available for harvest. Consistency/uniformity of fall turkey hunting regulations was ranked as the least important condition affecting fall hunting satisfaction.

- Regardless of how hunters were grouped, several patterns in the rank order of satisfactions emerged. In nearly every subgroup, the dimension, “how often I see or hear turkeys” was ranked as the most important determinant to fall hunting satisfaction (the exception to this rule was that those who hunted only the fall 2012 season ranked, “opportunity to be in the field” as the most important dimension). In nearly every subgroup, overall opportunity to be in the field, number of turkey available for harvest, level of harvest success, contact with other hunters, and consistency of regulations were ranked second, third, fourth, fifth, and sixth, respectively.

Next Steps

Some of the findings from this survey are being used in a structured decision-making process focused on fall turkey hunting. The process will include a systematic and objective evaluation of hunter values and the consequences of implementing various changes in fall season structure (e.g., season timing, length, and bag limit) that are likely to impact turkey harvest and turkey hunter satisfactions in different fall turkey hunting zones. That work will be conducted by the New York State Cooperative Fish and Wildlife Research Unit, located at Cornell University, and is expected to be completed by fall, 2014.

ACKNOWLEDGMENTS

We extend our appreciation to New York State's turkey hunters for their participation in this study. Many staff within the New York State Department of Environmental Conservation (DEC) Bureau of Wildlife helped during various phases of this research. For their assistance, we express our thanks to DEC staff Michael Schiavone, Sandy Chan, Lance Clark, Jeff Eller, Emilio Rende, and Pat Vissering.

The Survey Research Institute (SRI) at Cornell University implemented survey mailings, provided a clean dataset, and conducted nonrespondent follow-up interviews.

Nancy Connelly (Human Dimensions Research Unit) provided consultation on sampling strategy, data weighting, and analysis.

Our survey instrument and request to conduct survey research was reviewed and granted approval by the Cornell University Office of Research Integrity and Assurance (Institutional Review Board for Human Participants Protocol ID# 1006001472).

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INTRODUCTION

The historical range of the eastern wild turkey (*Meleagris gallopavo*) included New York State south of the Adirondack region. Loss of hardwood forests to logging and agriculture, unregulated hunting, and introduction of domestic poultry diseases led to the decline and extirpation of the turkey from New York by the mid-1800s (Eaton 1964). By the 1950s, habitat conditions in New York again became favorable for turkey and remnant populations from Pennsylvania gradually became reestablished along the New York – Pennsylvania border (Eaton 1964). Beginning in 1959, the New York State Conservation Department (now the New York State Department of Environmental Conservation [DEC]) supplemented this natural immigration through trap and transfer of wild birds (Kennamer and Kennamer 1990). Secure populations of turkeys became established in western New York and turkey recolonized the state over several decades. Healthy populations of turkey now occur throughout New York State, allowing for regulated turkey hunting in all 55 upstate counties and Suffolk County on Long Island. In 2013, over 100,000 hunters participated in New York's spring turkey hunting seasons, and over 50,000 hunters participated in the fall turkey hunting season (DEC 2013).

Participation in New York's fall turkey hunting seasons has declined in recent years. From 2000–2003, DEC surveys estimated 103,500 spring turkey hunters and 80,500 turkey hunters during the fall season. More recently, surveys have indicated that spring turkey hunter numbers have been relatively stable (98,600 hunters/year from 2009–12), while the estimated number of fall turkey hunters has declined to about 53,000. Reasons for the decline in fall turkey hunting are unclear.

Only a few states have collected detailed information on turkey hunters (e.g., Missouri [Vangilder et al. 1990], Virginia [Bittner and Hite 1991], Mississippi [Forbes et al. 1996, Godwin et al. 1997], Texas [Harmel-Garza et al. 1999], Kansas [Applegate et al. 2002], Ohio [Swanson et al. 2005], and Pennsylvania [Casalena et al. 2008]). Some studies have focused on the economic impact of turkey hunting (Baumann et al. 1990, Potter et al. 1990, Cartwright and Smith 1990), while others have focused on turkey hunting satisfactions (Eichholz and Hardin 1990, Hazel et al. 1990, Siemer et al. 1995, Van Why et al. 2001, Wynveen 2005).

Prior to 1993, no research had been conducted to characterize a relatively new and expanding cadre of turkey hunters in New York. Wildlife managers in the DEC Bureau of Wildlife identified a lack of information on turkey hunters as an important impediment to informed decision making related to public use of turkeys via regulated hunting. The Human Dimension Research Unit (HDRU), in collaboration with DEC, conducted research to provide quantitative information about New York turkey hunters, their hunting satisfactions, and their preferences related to turkey management (Siemer et al. 1995). Results from that study suggested that satisfaction with turkey management was high; about 74% of hunters were generally satisfied with DEC's turkey management program.

DEC has two primary goals related to turkey management: (1) protect the long term security of the wild turkey population and (2) maintain opportunities for turkey hunters and others to enjoy the wild turkey resource now and in the future (DEC 2013). Achieving those goals simultaneously has become more difficult in recent years. Several indicators suggest that the

turkey population is declining statewide (DEC 2013). In coming years, regional or statewide changes in hunting regulations (i.e., season timing, length, and bag limit) may be necessary to sustain the turkey population at a level desired by hunters and other stakeholders. But regulation changes designed to achieve turkey population objectives may entail tradeoffs that affect hunter perceptions of hunting season quality, or other impacts that affect hunter satisfaction. DEC needs information to improve understanding of the factors that influence hunter satisfaction with regulations, and how regulation changes may affect satisfaction among turkey hunter subgroups (e.g., spring vs. fall hunters). Ideally, DEC would like to maintain a regulatory approach that sustains turkey populations without compromising hunter satisfaction.

DEC is conducting multiple types of research to inform decisions about turkey management. That research program is described on the agency’s website under the heading, “Wild Turkey Research (www.dec.ny.gov/animals/48808). The research program is founded on the knowledge that turkey populations are in large part a function of weather conditions (especially during nesting and brood rearing), habitat quality and quantity, predation (especially nest predation), and potentially, fall hunting mortality of hens. DEC’s turkey research program is focused on gathering information on these factors to determine their relative importance, and to adapt the turkey management program to the ecological and social context in which that system exists. In addition to sponsoring biological research (i.e., turkey survival rates and harvest rates, turkey harvest potential in different landscapes), DEC also has sponsored research to understand the activities and interests of New York State turkey hunters (Figure 1). DEC describes these as the “puzzle pieces” of turkey management that agency staff need to understand as they revise the wild turkey management plan they completed in 2005 (DEC 2005).

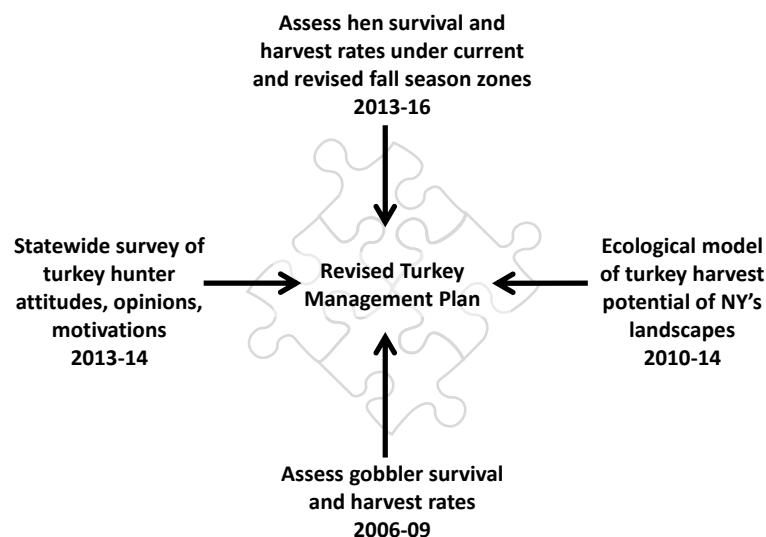


Figure 1. DEC description of research activities that will inform revision of the 2005 turkey management plan (Source: NYSDEC <<http://www.dec.ny.gov/animals/48808.html>>).

In 2013, DEC partnered with the HDRU to complete two statewide surveys of New York State turkey hunters. The first study focused on providing a statewide profile of turkey hunters, their activities, and their opinions about spring and fall turkey hunting regulations. Results from that (phase I) study were reported in Boulanger et al. (2013). Here we provide descriptive findings from a survey of fall turkey hunters that was implemented in March, 2013.

Purpose and Objectives

The purpose of the phase II study was to collect information necessary to consider conditions that contribute to turkey hunter satisfaction with the quality of *fall* turkey hunting in New York. The project had the following objectives:

- Characterize fall turkey hunters and their activities.
- Determine conditions that contribute to fall turkey hunter satisfaction and rank these conditions to clarify their relative contribution to perceived quality of fall turkey hunting among active fall turkey hunters in New York.

A better understanding of current fall season turkey hunters and their viewpoints will help inform decisions for setting fall hunting seasons (e.g., season timing, season length). Information from this study will also provide valuable input to wildlife managers in New York State as they update New York's wild turkey management plan.

METHODS

Sampling

The target audience for this study was New York State hunters who held a permit to take turkey in the 2011–2012 hunting license year (October 1, 2011–September 30, 2012). NYSDEC provided access to a listing of all 2011–12 turkey permit holders in New York, from which we drew a stratified random sample of 6,250 hunters.

We selected proportionately across all resident license types that include a turkey hunting permit (i.e., lifetime sportsman and fishing, conservation legacy and fishing, super sportsman and fishing, turkey permit [with a small game privilege], and trapper super sportsman and fishing). We assigned all members of the database to one of five geographic strata, based on county of residence. The geographic strata were labeled: (1) Western New York, (2) Lake Plains, (3) Northern New York, (4) Southeastern New York, and (5) Long Island (Table 1). These strata correspond to fall turkey hunting zones (for this study, the St. Lawrence and Adirondack zones were combined into one stratum that we labeled as Northern New York) (Figure 2). Residents of New York City boroughs were randomly assigned to the southeastern zone or the Long Island zone before samples were drawn. Based on data from surveys of small game hunters and the locations of their hunting activity, we placed 78% of New York City residents (n=8,248) in the southeastern zone and 22% in the Long Island zone.

Table 1. Definition of geographic survey strata, based on counties in which hunters resided.

Geographic strata name	Hunter county of residence
Lake Plains	Erie, Genesee, Monroe, Niagara, Orleans, Oswego, Seneca, Wayne
Northern New York	Clinton, Essex, Franklin, Fulton, Hamilton, Herkimer, Jefferson, Lewis, Oneida, Saratoga, St. Lawrence, Warren
Southeastern New York	Albany, Broome, Cayuga, Chenango, Columbia, Cortland, Delaware, Dutchess, Greene, Madison, Montgomery, Onondaga, Orange, Otsego, Putnam, Rensselaer, Rockland, Schenectady, Schoharie, Sullivan, Tioga, Tompkins, Ulster, Washington, Westchester
Western New York	Allegany, Cattaraugus, Chautauqua, Chemung, Livingston, Ontario, Schulyer, Steuben, Wyoming, Yates
Long Island	Suffolk, Nassau (*22% assigned to Long Island; 78% to S.E. New York)

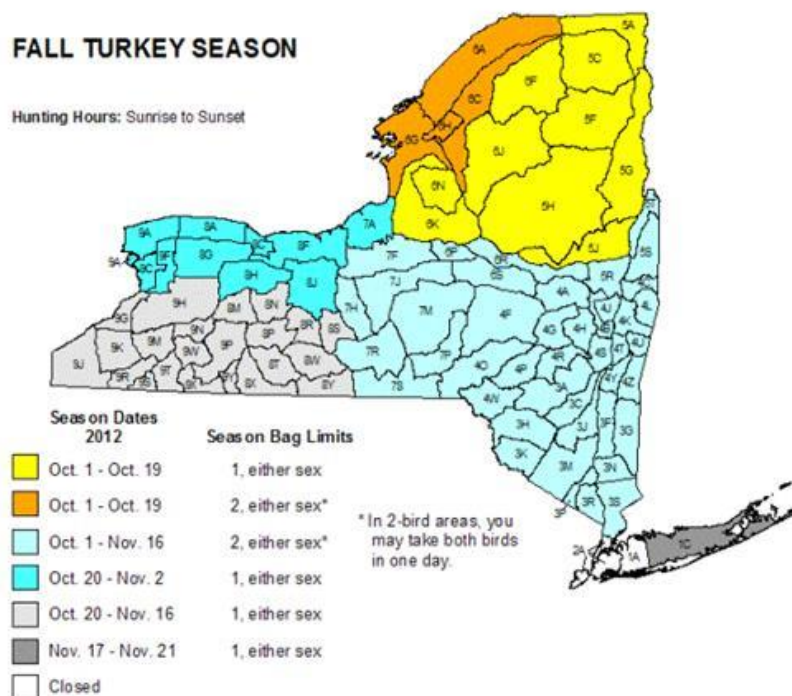


Figure 2. Fall turkey hunting zones for the 2012-2013 hunting license year (Source: NYSDEC).

We drew a random sample of 1,250 hunters in each stratum. We selected resident license holders between age 18 and 80. We did not include minors, because doing so would have required obtaining parental consent for participation in the study. We made a decision to exclude the 3% of hunting license holders in New York State who are over 80 years old, reasoning that truncating the sample in this way was a reasonable approach to minimizing contact with license holders who no longer go afield.

Survey Instrument

In cooperation with a DEC contact team, the Human Dimensions Research Unit at Cornell University developed a survey instrument (Appendix A) addressing study objectives. The instrument was reviewed and approved by the Cornell University Office of Research Integrity and Assurance (Institutional Review Board for Human Participants, Protocol ID#1006001472).

To characterize turkey hunters and their activities (objective 1), we assessed: hunting effort and practices; methods and equipment used; harvest success; type of land hunted; motivations for hunting only the spring or fall season; and background information on the hunters themselves. We also assessed fall turkey hunters' overall satisfaction with their fall turkey hunting experiences in the last year they hunted for turkey in New York and how their level of satisfaction with their fall turkey hunting experiences had changed over the last few years.

To determine and rank conditions that contribute to turkey hunter satisfaction (objective 2), we assessed the importance of multiple conditions pertaining to seeing/hearing turkey, harvest success, contact with other hunters, turkey available for harvest, turkey hunting opportunity, and consistency in fall regulations. Hunters were asked to rate how important each condition was to their satisfaction with the quality of fall hunting in New York State (scale 0–4; 0 = not important, 4 = very important). Then, the 28 individual conditions were aggregated into six dimensions of hunting satisfaction, and hunters were asked to rank the dimensions from most important (ranking = 1) to least important (ranking 6) in determining their personal satisfaction with the quality of a fall turkey hunting experience in New York State. Satisfaction dimensions were developed collaboratively during a set of working sessions with a team of DEC wildlife managers, HDRU researchers, and researchers with the New York State Cooperative Fish and Wildlife Research at Cornell University.

Survey Implementation

The Survey Research Institute at Cornell University (SRI) was contracted by HDRU to conduct both survey mailings and a nonrespondent follow-up telephone survey. The mail survey was implemented in March, 2013. Each member of the sample was contacted up to four times (i.e., (1) an initial letter and questionnaire, (2) a reminder letter, (3) a third reminder letter and replacement questionnaire, and (4) a final reminder about one week after the third mailing). All survey mailings were completed between March 4, 2013 and March 29, 2013. To encourage survey response, several characteristics of the Dillman (2000) Total Design Method were incorporated, including a brief, respondent-friendly questionnaire, multiple contacts, and cover letter elements that personalized correspondence. Completed surveys were scanned with optical

mark reading software and the results were reviewed by SRI staff. The last surveys to be processed were received on May 1, 2013 (indicating that they had been completed before the start of the 2013 spring turkey hunting season).

SRI staff conducted telephone follow-up interviews with 50 non-respondents in each stratum (250 interviews total). HDRU provided SRI with contact information for all nonrespondents. From that group, SRI randomly selected a sample of 1,264 nonrespondents to be contacted by telephone. Calls were made until the target number of 50 interviews per strata was completed. Data collection began on April 15, 2013 and was completed on May 16, 2013.

The nonrespondent telephone interview obtained data on eight topics explored in the mail survey: years of turkey hunting in New York, average number of days of turkey hunting in New York in the previous three seasons, whether hunters had ever taken a turkey in New York, whether they had gone turkey hunting in 2012, which season (s) they had hunted in 2012 (spring, fall, or both), satisfaction with most recently-hunted fall turkey hunting season in New York, and change in satisfaction with fall turkey hunting in New York over the last few years.

Analysis

We used IBM SPSS Statistics 21.0 (SPSS 2012) software to calculate frequencies and measures of central tendency (e.g., mean). We placed respondents into groups (i.e., season hunted, region of residence, region where fall 2012 season participants hunted most often) for comparison. Hunters were grouped into regions where they hunted based on the county that they reportedly hunted in most often in the fall 2012 season. We used the chi-square statistic to test for significant differences between groups of hunters at the $P \leq 0.05$ level.

Ranking importance of satisfactions

We aggregated 28 individual conditions into six dimensions of hunting satisfaction, and asked hunters to rank the dimensions from most important (ranking = 1) to least important (ranking 6) in determining their personal satisfaction with the quality of a fall turkey hunting experience in New York State. Only respondents who provided a ranking for all six dimensions, and provided rankings within the range of offered values (i.e., 1–6) were included in the analysis.

Some respondents incorrectly assigned the same ranking to multiple dimensions (essentially, they gave each dimension a rating from 1 to 6, instead of ranking the items from 1 to 6). For example, a respondent may have assigned a number 1 ranking to “how often I hear or see turkey,” and “number of turkey available for harvest.” In order to retain these respondents in our analysis, we assigned an average score to dimensions with the same ranking. The average score assigned depended on the number of duplicate rankings and their place value.

Weighting to address sampling bias

We sampled an equal number of turkey hunting permit holders in each geographic stratum ($n=1,250$), even though permit holders are not equally distributed across the state. This raises the possibility of sampling bias. To address that possibility, we developed weighting factors for each geographic stratum using the formula:

$$WT_i = (\%PERMITS_{in}STRATUM_i \times TOTALRESP) / STRATUM_iRESP,$$

where,

WT_i = weighting factor for respondents living in $STRATUM_i$

$\%PERMITS_{in}STRATUM_i$ = proportion of all NY State resident turkey hunting permit holders age 18 to 80 who live in $STRATUM_i$

$TOTALRESP$ = total number of respondents from all stratum combined, and

$STRATUM_iRESP$ = number of respondents living in $STRATUM_i$.

We applied the following weight factors based on county of residence: 1.028 for the Lake Plains; 0.913 for Northern New York; 1.906 for Southeastern New York; 0.743 for Western New York; and 0.342 for Long Island.

RESULTS

A total of 2,508 questionnaires were returned from a pool of 6,250, yielding a response rate of 41.2% after deleting undeliverable questionnaires (n=156) (Table 2). Twenty-seven percent (n=650) of respondents reported that they had *never* hunted turkey (i.e., were not part of the target population). The presence of nonturkey hunters in the sample is attributable to the fact that turkey permits are issued to holders of “combination” hunting licenses (e.g., sportsmen, super sportsmen), regardless of whether or not they hunt turkeys. Respondents who said they had *never* hunted turkey were not asked to answer any further survey questions, and were not included in our analysis.

Table 2. Summary of survey response by geographic strata for the 2012 survey of turkey hunter participation in New York State.

	Geographic strata					Total
	Lake Plains	Northern NY	Southeastern NY	Western NY	Long Island	
Total sample	1,250	1,250	1,250	1,250	1,250	6,250
Useable returns	535	500	480	552	441	2,508
Undeliverable	28	39	39	22	28	156
Return unusable	4	1	1	2	0	8
Return rate	43.8%	41.3%	39.6%	45.0%	36.1%	41.2%

Nonresponse bias analysis

A sample of 50 nonrespondents in each geographic stratum were interviewed by telephone to assess differences between respondents and nonrespondents on key traits. We present the outcome of nonrespondent contacts in Appendix B, Table B1. Key characteristics of respondents and nonrespondents are presented in Appendix B, Table B2.

About the same proportions of respondents and nonrespondents had hunted turkeys at some time (27% vs. 26%), and had participated in the spring 2012 turkey hunting season (85% vs 83%) (Table B2). But nonrespondents also differed from respondents in several ways.

Nonrespondents: (a) were less likely than respondents to have hunted turkeys in 2012 (56% vs. 74%) (Table B2); (b) were younger than respondents (mean age 48.9 vs. 54.5 years); (c) had hunted fewer days in fall season (3.5 vs. 4.1); and (4) had hunted fewer years in New York (8.5 vs. 11.1). Both groups reported similar trends in level of satisfaction with fall turkey hunting New York over the past few years (Table B3), but nonrespondents were more likely than respondents to say that they were moderately or very satisfied with their most recent fall turkey hunting experiences (65% vs. 41%) (Table B4).

In order to explore how differences in age affected statewide survey results, we analyzed satisfactions ranking within three age cohorts (i.e., 18–35, 36–55, and 56–80 years of age). We found no differences between age cohorts; all cohorts assigned the same rank order among satisfactions dimensions. Given the outcome of those comparisons, statewide results were not adjusted for age differences between respondents and nonrespondents.

In the following text and tables, statewide results are reported after weighting by regional strata (i.e., weighting to adjust for the proportion of turkey hunters who live in the geographic region represented by a respondent). As noted earlier, we report results for those respondents who had hunted turkeys in New York State for 1 year or more (respondents who held a turkey hunting permit, but had *never* hunted turkey provided no data and were not included in our analysis).

Turkey hunters and their activities

The mean age of respondents was 54.5 years (range 18 to 80 years). Age did not differ by region of hunter residence ($\chi^2_8 = 14.53$, $P = 0.07$).

Overall, few (11%) respondents belonged to turkey hunter organizations. The proportion of hunters who belonged to a turkey hunter organization did not differ by region of hunter residence ($\chi^2_4 = 1.49$, $P = 0.83$).

Respondents had hunted turkey for an average of 15 years in New York State (range 1 to 52 years). About 48% of respondents had 1–5 years of experience (14% had hunted for 6–10 years, and 38% for over 11 years). Years of experience differed by region of hunter residence ($\chi^2_8 = 40.33$, $P < 0.01$; Table 3). The percentage of newer hunters with 1–5 year experience was highest among Long Island residents.

Table 3. Years turkey hunting experience by residence strata of 2012 New York turkey hunters.

	Regional Strata									
	Lake Plains		Northern NY		Southeastern NY		Western NY		Long Island	
	n	%	n	%	n	%	n	%	n	%
Years										
1–5	92	24.3	85	29.6	75	22.0	91	22.9	108	33.4
6–10	73	19.3	75	26.1	71	20.8	57	14.4	68	21.1
11 or more	213	56.3	127	44.3	195	57.2	249	62.7	147	45.5
Total	378	100	287	100	341	100	397	100	323	100

$\chi^2_8 = 40.33, P < 0.01$

Overall, approximately 69% of respondents had bagged a turkey in New York at some time. Of these successful hunters, the mean number of turkeys taken during their hunting career was 12.

Most turkey hunters (93%) had hunted some other species before they began hunting turkeys. The first species ever hunted by turkey hunters was most likely to be deer (33.7%), rabbit (23.7%), squirrel (20.4%), or pheasant (8.1%).

Over the last 3 years, respondents spent an average of 8 (range 1 to 31 days) and 7 days (range 1 to 52 days) hunting during the spring and fall seasons, respectively. A majority (54%) of respondents said that the number of days they hunted per year had remained about the same in spring and fall turkey seasons over the last 3 years (Table 4). Perhaps most notably, close to one-third of spring and fall season hunters said the number of days they went hunting per year had declined over the last 3 years.

Approximately 74% of respondents who had gone turkey hunting in NYS at some time went turkey hunting in NYS in 2012. Of those who hunted in 2012, 89% had hunted the spring season and 66% had hunted during a fall season. Approximately 21% and 8% of turkey hunters bagged a turkey in the spring and fall, respectively. Rate of success in harvesting a turkey during the fall season varied by region hunted (ranging from 3% in the lake plains region to 20% in northern New York) (Table 5).

Of those who hunted in 2012, about 57% had hunted both the spring and fall seasons, 34% had hunted only the spring season, and 9% had hunted only the fall season. When asked why they participated only in spring season, the most frequent responses from spring-only hunters were, “I would rather hunt for other game in the fall” (69%), “I prefer hunting turkey only in the spring” (54%), or “I didn’t have enough time to go turkey hunting [in both seasons]” (22%). When asked why they participated only in fall season, the most frequent responses from fall-only hunters were, “I didn’t have enough time to go hunting” [in both seasons] (57%) or “I prefer hunting only in the fall” (24%) (Table 6).

When we analyzed the responses of hunters who hunted in fall 2012, we found that a majority (71%) used shotguns on every hunt to pursue turkeys; most (98%) never hunted turkey with a handgun. A majority of respondents who had hunted turkey in fall 2012 at least occasionally hunted for other small game and fall turkey at the same time (55.1%), and bow hunted for deer and fall turkey at the same time (62.1%) (Table 7).

A majority (>65%) of those who hunted turkeys in 2012 during the spring or fall turkey seasons reported hunting only on private land where no access fee was charged; few (<13%) reported hunting on public land during the spring or fall seasons (Table 8).

Table 4. Trend in number of days spent turkey hunting over the last three years, reported by hunters who had hunted during the 2012 spring or 2012 fall turkey hunting seasons.

	2012 Spring season hunters		2012 Fall season hunters	
	n	%	n	%
Increased	256	16.0	147	10.2
Remained the same	858	53.7	771	53.6
Decreased	486	30.4	520	36.2
Total	1600	100.0	1438	100.0

Table 5. Proportion of fall 2012 fall turkey hunters who reported bagging a turkey during fall season, by region where participants turkey hunted most often in fall 2012.

	Fall zone where respondent hunted most often in 2012							
	Lake Plains		Northern NY		Southeast NY		Western NY	
Success	n	%	n	%	n	%	n	%
No	88	97.6	69	80.2	302	86.5	210	93.3
Yes	3	3.3	17	19.8	47	13.5	15	6.7
Total	91	100.0	86	100.0	349	100.0	225	100.0

$$\chi^2 = 18.87, P < 0.001$$

Table 6. Reasons why hunters did not hunt in both spring and fall turkey hunting seasons, among hunters who only participated in the 2012 spring season or a 2012 fall turkey hunting season.

Reason	Season hunted in 2012			
	Spring season only (n=418)		Fall season only (n=124)	
	n	%	n	%
I didn't have enough time to go turkey hunting [in both seasons]	94	22.4	70	56.8
I prefer hunting turkey only in the fall	NA	NA	29	23.8
I would rather hunt for other game in the fall (e.g., deer, waterfowl, small game)	289	69.3	NA	NA
I prefer hunting turkey only in the spring	227	54.3	NA	NA
I would rather fish in the spring	NA	NA	21	17.3
There were too few turkey around	51	12.1	15	12.3
I did not have a place to hunt	15	3.6	15	12.3
I was concerned about conflicts with other hunters	15	3.6	10	8.4
I was concerned about conflicts with non-hunters	6	1.5	1	1.1

Table 7. Hunting implements and methods used by respondents who hunted in New York during the fall 2012 fall turkey hunting season.

	Frequency of use (%)				
	n	Never	Sometimes	Often	Every Hunt
<u>Implement</u>					
Hunting with a shotgun	819	1.9	7.2	20.0	71.0
Hunting with a handgun (firing shot pellets)	592	97.9	0.9	0.5	0.7
<u>Method</u>					
Bow hunt for deer and <i>fall turkey</i> at the same time	718	38.0	25.1	16.4	20.6
Hunt for other small game and <i>fall turkey</i> at the same time	679	44.9	34.1	11.9	9.1

Table 8. Land types used by New York turkey hunters who hunted during the 2012 spring turkey hunting season or the 2012 fall turkey hunting season.

	2012 spring hunters		2012 fall hunters	
	n	%	n	%
Only on private land	779	65.4	594	65.4
Mostly on private land	279	23.4	193	21.2
Mostly on public land	85	7.1	73	8.0
Only on public land	49	4.1	49	5.4
Total	1191	100.0	908	100.0

Overall satisfactions with fall turkey hunting

Overall, approximately 41% of those who hunted turkey in the fall were moderately or very satisfied with their fall turkey hunting experiences in New York in the last year that they hunted turkey; 39% were neither satisfied nor dissatisfied and 20% were moderately or very dissatisfied (Table B4). Although hunters who spent the most time turkey hunting in the Northern and southeastern regions appeared to be more satisfied with their fall turkey hunting experiences, differences between groups were not significant at the $p = 0.05$ level ($\chi^2_8 = 11.57$, $P = 0.072$; Table 9).

Most (58%) fall turkey hunters reported that their level of satisfaction with their fall turkey hunting experiences had stayed the same over the last few years; 14% and 28% reported that their level of satisfaction increased and decreased, respectively (Table B3). Change in satisfaction did not differ by region hunted most often ($\chi^2_8 = 10.82$, $P = 0.094$; Table 10). We compared hunters who reported that their satisfaction with fall hunting had *decreased*, to those who said their satisfaction with fall hunting had increased (Table 11). Among hunters who reported that their satisfaction with fall hunting had *decreased*, the most important factors contributing to change in satisfaction were “change in turkey numbers in the area where I hunt,” and “change in the rate at which I encounter and have a chance to bag a turkey (i.e., harvest opportunities).” Among hunters who reported that their satisfaction with fall hunting had *increased*, the most important reasons for increased satisfaction were “change in personal circumstances” and “change in turkey numbers in the area where I can hunt.” For both satisfaction groups, change in rate of encounters/conflicts with other hunters and change in turkey hunting regulations were the least important factors contributing to change in fall hunting satisfactions.

Ratings for conditions that may affect fall hunting satisfactions

Hunters were asked to rate how important 28 conditions were in determining their satisfaction with the quality of fall turkey hunting in New York State. Specific conditions were listed under six headings: hearing/seeing turkey before the fall season, opportunity to be in the field in the fall, number of turkey available for harvest, harvest success during the fall season, contact with other hunters during the fall season, and consistency/uniformity of fall regulations. A majority of respondents considered 13 conditions to be moderately to very important to their satisfaction (i.e., they rated the conditions a 3 or 4 on a scale of 0 to 4 [0=not important and 4=very important]; Table 12).

A majority of respondents rated all five conditions under the heading of hearing/seeing turkey as moderately or very important in determining their satisfaction with the quality of fall turkey hunting in New York. That included seeing turkey flocks in the fall, finding turkey sign, hearing turkey, seeing gobblers, and knowing that friends and family were hearing and seeing turkey in the fall. Seeing turkey flocks in the fall was particularly important; 78% of respondents rated seeing turkey flocks in fall as moderately to very important to their satisfaction with fall hunting (Table 12).

Table 9. Satisfaction with participant's fall turkey hunting experiences in New York in that last year they hunted, by fall zone where they hunted most often in 2012.

Response	Fall zone where participant hunted most often in 2012							
	Lake Plains		Northern NY		Southeast NY		Western NY	
	n	%	n	%	n	%	n	%
Very or moderately satisfied	44	41.9	64	55.2	157	47.9	119	38.7
Neither satisfied nor dissatisfied	34	32.4	34	29.3	111	33.6	106	41.7
Very or moderately dissatisfied	27	25.7	18	15.5	62	18.8	74	19.5
Total	105	100.0	116	100.0	330	100.0	299	100.0

Table 10. How level of satisfaction with fall turkey hunting experiences in New York have changed over the past few years, by fall zone where they hunted most often in 2012.

Response	Fall zone where participant hunted most often in 2012							
	Lake Plains		Northern NY		Southeast NY		Western NY	
	n	%	n	%	n	%	n	%
Increased, increased greatly	13	12.4	22	19.0	56	17.1	44	14.7
Stayed the same	65	61.9	71	61.2	194	59.1	158	52.8
Decreased, decreased greatly	27	25.7	23	19.8	78	23.8	97	32.4
Total	105	100.0	116	100.0	328	100.0	299	100.0

Table 11. Conditions that contributed to changes in their level of satisfaction with fall turkey hunting among hunters who reported that their level of satisfaction with fall hunting has declined over the last few years.

Condition	n	\bar{x}^1	How much conditions contributed to change (%)			
			Not at all	Slightly	Moderately	Greatly
Change in turkey numbers in the area where I can hunt						
Satisfaction decreased	385	3.18	15.5	8.9	17.2	58.4
Satisfaction increased	184	2.84	22.5	10.2	27.8	39.5
Change in the rate at which I encounter and have a chance to bag a turkey (i.e., harvest opportunities)						
Satisfaction decreased	384	3.02	15.9	12.6	25.3	46.2
Satisfaction increased	187	2.71	20.1	22.1	24.9	32.9
Change in personal circumstances (e.g., free time, health, hunting skills, loss of hunting partners, etc.)						
Satisfaction decreased	386	2.66	25.8	15.6	25.4	33.2
Satisfaction increased	190	2.85	17.4	16.5	29.7	36.4
Change in my ability to get access to places where I can hunt						
Satisfaction decreased	387	2.45	34.3	16.3	19.2	30.2
Satisfaction increased	190	2.48	35.3	13.5	19.1	32.1
Change in rate of encounters or conflicts with other hunters						
Satisfaction decreased	382	1.97	46.8	21.6	19.5	12.1
Satisfaction increased	188	2.02	45.5	20.1	20.8	13.5
Change in turkey hunting regulations						
Satisfaction decreased	367	1.74	54.6	22.7	16.7	6.1
Satisfaction increased	177	1.92	43.4	27.0	24.1	5.4

¹ Response options 1–4; 1=have not contributed at all; 2=contributed slightly; 3=contributed moderately, 4=contributed greatly to my satisfaction with fall turkey hunting over the past few years.

Table 12. Hunter importance ratings assigned to 28 conditions that may determine satisfaction with the quality of fall turkey hunting in New York State, listed in descending order of importance within six categories.

Conditions	n	\bar{x}^1	Level of importance to satisfaction with fall hunting in NY (%)		
			Not important	Low Importance	Mod to high importance
Hearing/seeing turkey before or during fall season					
Seeing turkey flocks in the fall	1479	3.10	5.8	16.3	77.9
Finding/seeing turkey sign (scratching, droppings, etc.)	1477	2.84	6.5	25.9	67.6
Hearing turkey in the fall	1470	2.62	11.6	27.6	60.8
Seeing gobblers in the fall	1435	2.60	10.4	31.7	58.0
Knowing that friend/family are hearing or seeing turkey in the fall	1475	2.36	13.2	35.8	51.0
Opportunity to be in the field in the fall					
Having places to hunt fall turkey that are close to home	1464	2.99	9.5	17.9	72.7
Having access to places to hunt turkey on <i>private land</i>	1458	2.85	12.8	18.0	69.2
A season length that gives me plenty of opportunities to hunt	1465	2.95	6.5	24.4	69.1
A fall season that includes two or more weekends	1463	2.78	10.8	24.2	65.0
Avoiding overlap of fall turkey and firearms deer seasons	1463	2.53	20.8	20.5	58.7
Opportunity to take 2 turkeys in the <i>fall</i> (bag limit)	1459	2.03	21.1	40.6	38.3
Opening fall season on a weekend vs. on a weekday	1460	1.83	33.3	29.0	37.7
Avoiding overlap of fall turkey and bowhunting deer seasons	1456	1.70	36.4	29.9	33.7

¹ Response options 0–4; 0 = not important; 1–2 = low importance; 3–4 = moderate-high importance.

Table 12. (continued).

		Level of importance to satisfaction with fall hunting in NY (%)			
Conditions	n	\bar{x}	Not important	Low Importance	Mod to high importance
Turkey available for harvest					
Number of turkey available to hunt in the <i>fall</i>	1465	2.82	8.2	24.5	67.3
Number of adult male turkeys (gobblers) available to hunt in the <i>fall</i>	1464	2.32	12.2	41.9	45.9
The extent to which fall turkey harvest will <i>reduce</i> availability of gobblers next <i>spring</i>	1456	2.15	15.0	45.7	39.3
Harvest success during fall season					
Amount of effort needed to encounter a harvestable turkey in the fall	1453	2.11	17.6	43.1	39.3
Bagging any turkey in the fall	1455	2.00	19.9	42.9	37.2
Bagging a big turkey (either sex)	1456	1.85	22.0	46.1	31.9
Bagging a gobbler in the fall	1443	1.84	24.4	43.3	32.3
Bagging 2 turkeys in the fall	1450	1.35	36.5	43.9	19.6
Contact with other hunters during fall season					
<i>Not seeing or encountering</i> other turkey hunters outside my group	1465	2.43	18.0	27.9	54.2
<i>Not seeing or encountering</i> deer or small game hunters	1465	2.16	22.7	31.4	45.9
Consistency in fall regulations					
Avoiding fall regulation changes from year to year	1456	2.40	17.8	28.0	54.2
Having the same bag limit across hunting zones in fall	1457	1.87	25.6	39.4	35.0
Having the fall season open on the same <i>specific date</i> every year	1460	1.74	30.3	37.7	32.0
Having the fall season open on the same day in all hunting zones	1460	1.69	30.0	41.0	29.0
Consolidating the number of fall hunting zones (larger zones)	1457	1.65	28.1	44.9	27.0

A majority of respondents rated five of eight conditions under the heading of opportunity to be in the field as moderately or very important in determining their satisfaction with the quality of fall turkey hunting in New York (with 42%–49% of respondents indicating that those five conditions were *very* important to their satisfaction). These conditions included: having fall hunting places that are close to home, having hunting access to private land, having a season length that affords plenty of opportunity to hunt, having two or more weekends in which to hunt, and avoiding overlap between fall turkey hunting and firearms deer hunting seasons (Table 12).

Three items under other headings were also rated by a majority of hunters as being moderately or very important in determining their satisfaction with the quality of fall turkey hunting in New York. Those items included: the number of turkey available to hunt in the fall, not seeing or encountering other turkey hunters outside my group, and avoiding fall regulation changes from year to year (Table 12).

For most conditions, we found no significant differences in importance ratings across hunters grouped according to the area of the state where they spent the most time hunting in fall 2012. Significant differences between groups were found on the 6 conditions reported in Table 13. For example, hunters who spent most of their time hunting in northern New York were more likely than those who hunted in the Lake Plains to indicate that opportunity to take 2 turkeys in the fall was moderately or very important to their fall hunting satisfaction. Avoiding overlap of fall turkey and firearms deer seasons was of high importance to more Lake Plains than Northern New York turkey hunters.

Rankings for conditions that may affect fall hunting satisfactions

Weighted statewide mean rankings for dimensions of fall hunter satisfaction are presented in Table 14. In descending order, the top-ranked conditions that contributed to satisfaction with fall turkey hunting in New York State were: (1) how often hunters heard or saw turkey, (2) overall opportunity to be in the field, and (3) number of turkey available for harvest. Consistency/uniformity of fall turkey hunting regulations was ranked as the least important condition affecting fall hunting satisfaction.

Tables 14–17 report mean rankings for satisfactions in subgroups of hunters, including hunters who went turkey hunting in 2012 (Table 14), hunters who participated in both the fall 2012 and spring 2012 turkey hunting seasons or only the fall 2012 turkey hunting season (Table 14), turkey hunters who have increased or decreased their participation in the last few years (Table 15), hunters grouped by region where they hunted most often in 2012 (Table 16), and hunters grouped by age cohort (Table 17). Regardless of how hunters were grouped, a similar pattern in the rank order of satisfactions emerged. In nearly every subgroup, the dimension, “how often I see or hear turkeys” was ranked as the most important determinant to fall hunting satisfaction (the exception to this rule was that those who hunted only the fall 2012 season ranked, “opportunity to be in the field” as the most important dimension). In nearly every subgroup, overall opportunity to be in the field, number of turkey available for harvest, level of harvest success, contact with other hunters, and consistency of regulations were ranked second, third, fourth, fifth, and sixth, respectively.

Table 13. Level of importance 2012 fall turkey hunters placed on satisfactions related to opportunity to be in the field, turkey available for harvest, and harvest success during fall season, grouped according to the region where respondent hunted turkey most often in 2012.

Conditions	n	Level of importance (%)		
		Not important	Low importance	Moderate to high importance
Opportunity to be in the field in the fall				
A season length that gives me plenty of opportunities to hunt ^a				
Lake Plains	91	4.4	18.7	76.9
Northern New York	108	4.6	21.3	74.1
Southeastern New York	296	0.7	22.3	77.0
Western New York	278	1.4	29.9	68.7
A fall season that includes two or more weekends ^b				
Lake Plains	91	9.9	16.5	73.6
Northern New York	107	11.2	19.6	69.2
Southeastern New York	296	3.7	19.3	77.0
Western New York	278	7.6	29.1	63.3
Avoiding overlap of fall turkey and firearms deer seasons ^c				
Lake Plains	91	16.5	16.5	67.0
Northern New York	108	27.8	28.7	43.5
Southeastern New York	295	18.6	21.7	58.7
Western New York	277	24.5	17.7	57.8

^a Response options 0–4; 0 = not important; 1–2 = low importance; 3–4 = moderate-high importance.

Table 13. (continued)

Conditions	n	Level of importance (%)		
		Not important	Low importance	Moderate to high importance
Opportunity to take 2 turkeys in the <i>fall</i> ^d				
Lake Plains	91	24.2	45.1	30.8
Northern New York	108	15.7	33.3	50.9
Southeastern New York	297	10.1	41.1	48.8
Western New York	277	24.2	43.7	32.1
Turkey available for harvest				
The extent to which fall turkey harvest will reduce availability of gobblers next spring ^e				
Lake Plains	91	6.6	50.5	42.9
Northern New York	108	22.2	48.1	29.6
Southeastern New York	297	12.1	46.5	41.4
Western New York	275	15.6	46.9	37.5
Harvest success during fall season				
Bagging two turkeys in the fall ^f				
Lake Plains	90	37.8	41.1	21.1
Northern New York	107	29.9	43.0	27.1
Southeastern New York	295	26.1	50.2	23.7
Western New York	276	40.9	44.6	14.5
^a $\chi^2 = 16.73, P = 0.010$		^b $\chi^2 = 21.27, P = 0.002$		
^c $\chi^2 = 16.10, P = 0.013$		^d $\chi^2 = 35.78, P < 0.001$		
^e $\chi^2 = 13.60, P = 0.034$		^f $\chi^2 = 20.86, P = 0.002$		

Table 14. Mean importance rankings for dimensions of satisfaction with quality of fall hunting experiences in New York State, for fall turkey hunter subgroups.

Dimension of hunting satisfaction	n	Importance ranking ¹ mean (rank)	Standard error
How often I hear or see turkey²			
Had hunted fall season at least once in past	1,380	2.80 (1)	0.042
Hunted during the fall 2012 season	794	2.80 (1)	0.054
Hunted the 2012 spring and fall seasons	662	2.77 (1)	0.059
Hunted only the 2012 fall season	112	3.04 (2)	0.147
My overall opportunity to be in the field³			
Had hunted fall season at least once in past	1,380	3.10 (2)	0.041
Hunted during the fall 2012 season	794	3.02 (2)	0.054
Hunted 2012 spring and fall seasons	662	3.09 (2)	0.059
Hunted 2012 fall season only	112	2.59 (1)	0.143
Number of turkey available for harvest⁴			
Had hunted fall season at least once in past	1,380	3.19 (3)	0.036
Hunted during the fall 2012 season	794	3.26 (3)	0.048
Hunted 2012 spring and fall seasons	662	3.23 (3)	0.053
Hunted 2012 fall season only	112	3.49 (3)	0.116
My level of harvest success⁵			
Had hunted fall season at least once in past	1,380	3.71 (4)	0.042
Hunted during the fall 2012 season	794	3.72 (4)	0.055
Hunted 2012 spring and fall seasons	662	3.72 (4)	0.060
Hunted 2012 fall season only	112	3.66 (4)	0.152
Amount of contact I have with other hunters⁶			
Had hunted fall season at least once in past	1,380	3.90 (5)	0.045
Hunted during the fall 2012 season	794	3.97 (5)	0.059
Hunted 2012 spring and fall seasons	662	3.92 (5)	0.064
Hunted 2012 fall season only	112	4.21 (6)	0.164
Consistency/uniformity of turkey hunting regulations⁷			
Had hunted fall season at least once in past	1,380	4.28 (6)	0.043
Hunted during the fall 2012 season	794	4.23 (6)	0.058
Hunted 2012 spring and fall seasons	662	4.26 (6)	0.064
Hunted 2012 fall season only	112	3.97 (5)	0.146

¹ Importance rankings ranged from 1 to 6, with 1 indicating the most important and 6 indicating the least important dimension contributing to personal satisfaction with the quality of fall turkey hunting in New York State.

²Hearing or seeing turkeys, or finding/seeing turkey sign before or during the fall season; knowing friends or family are seeing or hearing turkeys.

³Length of the fall season; the number of turkey I am allowed to take in fall; number of weekends in fall season; whether the fall season opens on a weekday or a weekend; overlap of fall turkey and deer hunting seasons; having access to private land for fall turkey hunting.

⁴Number of turkeys and number of gobblers available in fall, the extent to which fall turkey harvest reduces availability of gobblers next spring.

⁵Whether I bag any turkey, a gobbler, or 2 turkeys in the fall; amount of effort needed to encounter a harvestable turkey in the fall.

⁶Not seeing or encountering other hunters during fall turkey season.

⁷Consolidating the number of hunting zones in fall; having same bag limit and opening the season on the same day in all zones; opening fall season on the same date every year; avoiding changes in fall hunting regulations from year-to-year.

Table 15. Mean importance rankings for dimensions of satisfaction with quality of fall hunting experiences in New York State, for hunters who said their level of turkey hunting has increased or decreased in the last 3 years.

Dimension of hunting satisfaction	n	Fall 2012 Hunters Importance ranking mean (rank)	Standard error
How often I hear or see turkey			
Hunting days have increased	133	2.70 (1)	0.125
Hunting days have decreased	452	2.87 (1)	0.078
My overall opportunity to be in the field			
Hunting days have increased	133	3.00 (2)	0.130
Hunting days have decreased	452	3.18 (3)	0.068
Number of turkey available for harvest			
Hunting days have increased	133	3.06 (3)	0.118
Hunting days have decreased	452	3.15 (2)	0.063
My level of harvest success			
Hunting days have increased	133	3.64 (4)	0.136
Hunting days have decreased	452	3.63 (4)	0.075
Amount of contact I have with other hunters			
Hunting days have increased	133	3.95 (5)	0.145
Hunting days have decreased	452	4.00 (5)	0.079
Consistency/uniformity of turkey hunting regulations			
Hunting days have increased	133	4.61 (6)	0.125
Hunting days have decreased	452	4.16 (6)	0.076

¹ Importance rankings ranged from 1 to 6, with 1 indicating the most important and 6 indicating the least important dimension contributing to personal satisfaction with the quality of fall turkey hunting in New York State.

Table 16. Mean importance rankings for dimensions of satisfaction with quality of fall hunting experiences in New York State, grouped by region where respondents hunted most often during the 2012 fall turkey hunting season.

Dimension of hunting satisfaction		Region where participant hunted the most in fall 2012			
		Lake Plains (n=106)	Northern NY (n=92)	Southeastern NY (n=391)	Western NY (n=238)
How often I hear or see turkey	\bar{x} (Rank)	2.73 ¹ (1)	2.91 (1)	2.95 (2)	2.62 (1)
My overall opportunity to be in the field	\bar{x} (Rank)	3.12 (2)	3.02 (2)	2.92 (1)	3.18 (2)
Number of turkey available for harvest	\bar{x} (Rank)	3.21 (3)	3.23 (3)	3.33 (3)	3.19 (3)
My level of harvest success	\bar{x} (Rank)	3.53 (4)	3.63 (4)	3.77 (4)	3.66 (4)
Amount of contact I have with other hunters	\bar{x} (Rank)	3.88 (5)	3.99 (5)	3.88 (5)	4.07 (5)
Consistency/uniformity of turkey hunting regulations	\bar{x} (Rank)	4.47 (6)	4.16 (6)	4.17 (6)	4.31 (6)

¹ Importance rankings ranged from 1 to 6, with 1 indicating the most important and 6 indicating the least important dimension contributing to personal satisfaction with the quality of fall turkey hunting in New York State.

Table 17. Mean importance rankings for dimensions of satisfaction with quality of fall hunting experiences in New York State, grouped according to hunter age cohorts.

Dimension of <u>hunting satisfaction</u>		Hunter age cohorts		
		Age 18–35 (n=218)	Age 36–55 (n=586)	Age 56–80 (n=576)
How often I hear or see turkey	\bar{x} (Rank)	2.76 ¹ (1)	2.76 (1)	2.86 (1)
My overall opportunity to be in the field	\bar{x} (Rank)	2.94 (2)	2.97 (2)	3.29 (3)
Number of turkey available for harvest	\bar{x} (Rank)	3.19 (3)	3.18 (3)	3.21 (2)
My level of harvest success	\bar{x} (Rank)	3.75 (4)	3.80 (4)	3.61 (4)
Amount of contact I have with other hunters	\bar{x} (Rank)	3.99 (5)	3.88 (5)	3.88 (5)
Consistency/uniformity of turkey hunting regulations	\bar{x} (Rank)	4.37 (6)	4.42 (6)	4.09 (6)

¹ Importance rankings ranged from 1 to 6, with 1 indicating the most important and 6 indicating the least important dimension contributing to personal satisfaction with the quality of fall turkey hunting in New York State.

DISCUSSION

The primary purpose of this study was to determine the conditions that contribute to fall turkey hunter satisfaction and rank these conditions to clarify their relative contribution to perceived quality of fall turkey hunting among subgroups of fall turkey hunters in New York. Our findings support the assumption that hunters' satisfaction with their fall turkey hunting experience is determined by a range of interrelated conditions. For many fall turkey hunters, those conditions include: the rate at which they hear/see turkey before or during the fall season; their ability to get access to private land and find places to hunt close to home; the length of, and number of weekends in, the fall turkey hunting season; their perception of the number of turkey available for harvest; their harvest success during the fall season; their contact with other hunters during the fall season; and consistency/uniformity of fall turkey hunting regulations. The finding that turkey hunter satisfaction depends on multiple interrelated factors was expected, based on previous surveys of hunters in New York State (Siemer et al 1995) and elsewhere (Eichholz and Hardin 1990, Hazel et al. 1990, Wynveen et al. 2005).

Multiple findings from this study also support the conclusion that the frequency with which fall turkey hunters hear and see turkey is the single most important component of fall hunting satisfaction at this time in New York State. Seeing and hearing turkeys in the fall was rated as moderately to very important to satisfaction for a majority of fall hunters, and "how often I hear or see turkey" received the highest rank as a dimension of fall turkey hunting satisfaction statewide. Hearing and seeing turkey was the highest ranked dimension of fall turkey hunting satisfaction in nearly every hunter subgroup (i.e., it was the most important dimension regardless of hunter age cohort, whether the respondent reported an increase or decrease in the number of days they hunted turkey each year, whether the respondent hunted turkey in 2012, whether the respondent hunted turkey only in fall or both in fall and spring). Hearing and seeing turkey also was the highest ranked dimension of fall turkey hunting satisfaction in three of four fall hunting regions (i.e., when we grouped hunters based on the region where they hunted turkey most often). Moreover, we found that among fall hunters who said their satisfaction with fall hunting had decreased, the most important factors contributing to decreased satisfaction were hunters' perceptions of change in turkey numbers in the area where they hunt, and a perceived change in the rate at which they encountered and had opportunities to harvest a turkey.

DEC's 2005 turkey management plan includes a goal to maintain high levels of hunter satisfaction with turkey hunting opportunities and turkey populations in New York State (NYSDEC 2005). The turkey hunter surveys we completed in 2013 raise concerns about current levels of turkey hunter satisfaction. In a 1993 survey of New York State turkey hunters, Siemer et al. (1995) found that 70% of respondents were moderately or greatly satisfied with their turkey hunting experiences. In 2013, Boulanger et al. (2013) found that 56% of respondents were moderately or greatly satisfied with their most recent turkey hunting experiences. Comparison of these studies suggests that overall turkey hunter satisfaction has declined in New York State. The 1993 study did not collect data specifically on satisfaction with fall hunting experiences, so we were not able to determine whether fall hunter satisfaction has declined. But in the study reported here, we found that only 41% of fall turkey hunters were moderately or greatly satisfied with their most recent fall turkey hunting experiences. That level of satisfaction is below the goals for hunter satisfaction set in the 2005 turkey management plan. Given these findings, it is

plausible to suggest that declines in fall hunting satisfaction are occurring as a result of lower turkey populations, which result in a reduced number of hunter encounters with turkey during fall seasons.

Management Implications

If one accepts the conclusion that hunter satisfactions are closely tied to turkey numbers, it follows that the future size of the wild turkey population will be a key driver of turkey hunter satisfaction. DEC could take a range of actions to promote growth of turkey populations. Some of those actions, such as improving turkey habitat on public lands and encouraging private landowners to maintain or enhance habitat conditions for turkey, could be accomplished without changing current turkey hunting regulations. But many of the actions that DEC could take to increase turkey populations would entail changes to hunting season structure (i.e., season timing, length, and bag limits). More conservative season structures would minimize fall mortality of turkey hens and may increase the number of hens available to reproduce in the following spring. Many questions remain as to how changes in hunting season structure, implemented to maintain or increase the size of the turkey population, would affect other dimensions of turkey hunter satisfaction. For example, the finding that consistency in hunting regulations was the least important factor affecting satisfaction with fall hunting season suggests that simplifying hunting rules or regulations for fall seasons may not directly increase turkey hunting satisfaction. Over the long-term, however, changes in fall season structure may increase hunter satisfaction if those changes result in increased hunter encounters with turkeys. Conversely, reducing fall season length may offer a means of reducing fall turkey (especially hen) mortality, but also may increase levels of hunter dissatisfaction. Managers cannot simultaneously maximize turkey populations and turkey hunting opportunity. Regulations intended to enhance wild turkey populations will need to be balanced against those designed to provide hunters with opportunities to go afield and harvest a bird.

Study Limitations

The fact that a portion of respondents did not correctly complete the question where they were asked to rate six dimensions of fall hunting satisfaction from most important (rank #1) to least important (rank #6) raises questions about using ranking items in future turkey hunter surveys. In this case, we are confident that the ranking information is an accurate reflection of respondents' views, because findings from the ranking analysis are generally consistent with those found when we analyzed how respondents rated the 28 individual elements of fall hunting satisfaction. Nevertheless, in future studies of hunter satisfaction, we recommend that ranking questions be simplified or replaced with alternative approaches to assessing relative importance of satisfactions dimensions.

Future Research

We assume that hearing and seeing turkey contributes to turkey hunting satisfaction partly because those experiences influence hunters' *perceptions* of turkey abundance and the probability one has of pursuing and harvesting a turkey. In light of recent declines in turkey

populations, and growing management attention on maintaining or increasing turkey populations, understanding the processes by which hunters develop their perceptions of turkey abundance is becoming an important information need. Managers would benefit from research on the degree to which factors such as personal experience, interpersonal communication, and exposure to different information sources explain different perceptions of turkey abundance among turkey hunters living in the same locality (with the same actual population of turkey). Findings from research on hunter perceptions of turkey abundance and hunter understanding of the relationship between hen harvest mortality and turkey abundance could inform communication programs designed to create accurate beliefs about turkey abundance and population changes in each region of New York State.

Some of the findings from this survey (i.e., data on how hunters rated and ranked factors that may influence satisfaction with fall turkey hunting) are being utilized in a structured decision-making process focused on fall turkey hunting. The process will include a systematic and objective evaluation of hunter values and the consequences of implementing various changes in fall season structure (e. g., season timing, length, and bag limit) that are likely to impact turkey harvest and turkey hunter satisfactions in different fall turkey hunting zones. That analysis is being conducted by the New York Cooperative Fish and Wildlife Research Unit, located at Cornell University. Results of their analysis are expected to be completed by fall 2014. Data from this survey, in combination with biological data such as hen survival, reproductive success, and landscape-scale habitat quality, will help agency staff evaluate a suite of harvest strategies that attempt to balance the competing objectives of maximizing both turkey populations and hunter satisfaction.

LITERATURE CITED

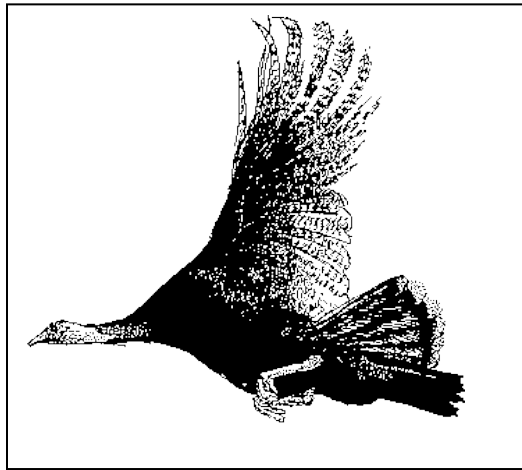
- Applegate, R. D., P. S. Gipson, T. T. Cable, and K. R. Van Why. 2002. Attitudes of Kansas wild turkey hunters: National Wild Turkey Federation members versus nonmembers. *Human Dimensions of Wildlife* 7(3):217–219.
- Baumann, D. P. Jr., L. D. Vangilder, C. I. Taylor, R. Engel–Wilson, R. O. Kimmel, and G. A. Wunz. 1990. Expenditures for wild turkey hunting. *Proceedings of the National Wild Turkey Symposium* 6:157–166.
- Bittner, L. A., and M. P. Hite. 1991. Attitudes and opinions of Virginia’s spring turkey hunters towards safety issues. *Proceedings of the Annual Conference Southeastern Association of Fish and Wildlife Agencies* 45:124–132.
- Boulanger, J. R., W. F. Siemer, D. J. Decker, and M. S. Baumer. 2013. Turkey hunting in New York: Hunter activities and views on regulations. *Human Dimensions Research Unit Publication Series* 13 –7. Department of Natural Resources, Cornell University, Ithaca, New York.
- Cartwright, M. E., and R. A. Smith. 1990. Attitudes, opinions, and characteristics of Arkansas spring turkey hunters. *Proceedings of the National Wild Turkey Symposium* 6:177–187.

- Casalena, M., R. C. Boyd, and C. S. Rosenberry. 2008. Knowledge, characteristics, and attitudes of wild turkey hunters in Pennsylvania. *Proceedings of the National Wild Turkey Symposium* 10:41–48.
- Dillman, D. A. 2000. *Mail and internet surveys: The total design method* (second edition). John Wiley & Sons, New York, New York, USA.
- Eaton, S. W. 1964. The wild turkey in New York State. *Kingbird* 14:4–11.
- Eichholz, N. F., and S. B. Hardin. 1990. Turkey hunter satisfaction in Florida. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 44:319–327).
- Forbes, J. T., K. D. Goldwin, and G. A. Hurst. 1996. Attitudes of wild turkey hunters toward potential regulation changes in Mississippi. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 50:457–465.
- Godwin, D. K., R. S. Seiss, C. C. Shropshire, D. A. Miller, G. A. Hurst, and B. D. Leopold. 1997. Characteristics and attitudes of wild turkey hunters in Mississippi. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 51:426–437.
- Harmel–garza, D., C. E. Adams, J. K. Thomas, and M. J. Peterson. 1999. Characteristics of wild turkey hunters in Texas. *Proceedings of the Annual Conference of the Southeastern Association of Fish and Wildlife Agencies* 53:390–401.
- Hazel, K. L., E. E. Langenau, Jr., and R. L. Levine. 1990. Dimensions of hunting satisfaction: multiple-satisfactions of wild turkey hunting. *Leisure Sciences* 12:383–393.
- IBM SPSS Statistics for Windows, Version 21.0. 2012. IBM Corp., Armonk, New York, USA.
- Kenamer, J. E., and M. C. Kenamer. 1990. Current status and distribution of the wild turkey, 1989. *Proceedings of the National Wild Turkey Symposium* 5:55–64.
- New York State Department of Environmental Conservation (DEC). 2005. Wild turkey management plan. < http://www.dec.ny.gov/docs/wildlife_pdf/turkeyplan.pdf>. Accessed 18 May 2013.
- _____. 2013. Turkey harvest management. <<http://www.dec.ny.gov/outdoor/48823.html>>. Accessed 17 May 2013.
- Potter, D. M. K. J. Boyle, and S. D. Reiling. 1990. Highlights from the 1989 survey of Maine turkey hunters. Department of Agriculture and Resource Economics Staff paper Series in Resource Economics, ARE 413. 4pp.

- Siemer, W. F., T. L. Brown, R. M. Sanford, and L. G. Clark. 1995. Satisfactions, dissatisfactions, and management preferences of New York State turkey hunters. Human Dimensions Research Unit Publication Series 95-4. Department of Natural Resources, Cornell University, Ithaca, New York.
- Swanson, D. A., R. J. Stoll, and W. L. Culbertson. 2005. Attitudes, preferences, and characteristics of Ohio's spring turkey hunters, 1985-2001. *Proceedings of the National Wild Turkey Symposium* 9:325-330.
- Vangilder, L. D., S. L. Sheriff, and G. S. Olsen. 1990. Characteristics, attitudes, and preferences of Missouri's spring turkey hunters. *Proceedings of the National Wild Turkey Symposium* 6:167-176.
- Van Why, K. R., R. D. Applegate, T. T. Cable, and P. S. Gipson. 2001. Survey of Kansas wild turkey hunters: experiences, opinions, and satisfactions. Kansas State University Agricultural Experiment Station and Cooperative Extension Service Report 874, Manhattan, Kansas, USA.
- Wynveen, C. J., D. A. Cavin, B. A. Wright, and W. E. Hammitt. 2005. Determinants of a quality wild turkey hunting season. *Environmental Management* 36(1):117-124.

APPENDIX A (SURVEY INSTRUMENT)

Turkey Hunting in New York: Focus on fall hunting season



and



Cornell University
Human Dimensions Research Unit

Turkey Hunting in New York:

Focus on fall hunting season

Research conducted for the
New York State
Department of Environmental Conservation (NYSDEC)

by the
Human Dimensions Research Unit
Department of Natural Resources
Cornell University

We would like to learn about your participation in turkey hunting in New York State, and about your views on what affects the quality of fall turkey hunting in New York. The information that hunters provide through this survey will improve consideration of hunter satisfactions when making decisions about regulation of turkey hunting seasons in New York.

Please complete this questionnaire as soon as you can, seal it with the white re-sealable label provided, and drop it in any mailbox; return postage has been paid. We are interested in learning about your experiences and opinions. Your participation in this survey is voluntary, but we sincerely hope you will take just a few minutes to answer our questions. Your identity will be kept confidential and the information you give us will never be associated with your name.

THANK YOU FOR YOUR HELP!

YOUR TURKEY HUNTING BACKGROUND

The questions in this section ask about your history of turkey hunting in New York.

- 1. How many years have you gone afield hunting turkey in New York?** *(If you have never gone turkey hunting in New York State, write "0".)*

_____ years → → IF "0", STOP HERE AND RETURN YOUR QUESTIONNAIRE

- 2. Was turkey the first animal you ever hunted?**

☐ Yes

☐ No → → What was the first animal you hunted? _____

- 3. Over the last 3 years, what is the average number of days you have hunted during the spring and fall turkey seasons in New York?** *(If you have not hunted during that season in the last 3 years, write "0".)*

_____ days during the spring season

_____ days during the fall season

- 4. Over the last 3 years, what has been the trend in the number of days you hunted for turkey each year in New York?** *(Please check [✓] one box for each hunting season.)*

My days of <u>spring</u> hunting have:	My days of <u>fall</u> hunting have:
<input type="checkbox"/> increased	<input type="checkbox"/> increased
<input type="checkbox"/> remained the same	<input type="checkbox"/> remained the same
<input type="checkbox"/> decreased	<input type="checkbox"/> decreased
<input type="checkbox"/> does not apply to me (I have hunted spring season fewer than 3 years)	<input type="checkbox"/> does not apply to me (I have hunted fall season fewer than 3 years)

5. Have you ever bagged a wild turkey in New York?

- ☐ Yes → IF YES, how many turkeys have you taken since you started hunting? _____ turkey(s)
- ☐ No

6. Did you go hunting for turkey at least once in New York State during 2012? (Please check [✓] one box.)

- ☐ Yes → IF YES, CONTINUE TO NEXT QUESTION
- ☐ No → IF NO, SKIP TO QUESTION 12

7. Please indicate which seasons you hunted in 2012, and whether you bagged a turkey during those hunting seasons.

	Spring 2012	Fall 2012
Did you go hunting at least once during this season?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did you bag a turkey during this season?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

8. If you hunted only in spring or only in fall during 2012, why didn't you hunt in both seasons? (Check [✓] all that apply.)

- ☐ I didn't have enough time to go turkey hunting
- ☐ There were too few turkey around
- ☐ I did not have a place to hunt
- ☐ I was concerned about conflicts with other hunters
- ☐ I was concerned about conflicts with non-hunters
- ☐ I would rather hunt for other game in the fall (e.g., deer, waterfowl, small game)
- ☐ I would rather fish in spring
- ☐ I prefer hunting turkey only in the spring
- ☐ I prefer hunting turkey only in the fall
- ☐ Other _____

9. Which of the following statements best describe where you went turkey hunting during 2012?
(Check [✓] one box for each season.)

Spring	Fall	
<input type="checkbox"/>	<input type="checkbox"/>	Only on <u>private</u> land
<input type="checkbox"/>	<input type="checkbox"/>	Mostly on <u>private</u> land
<input type="checkbox"/>	<input type="checkbox"/>	Mostly on <u>public</u> land
<input type="checkbox"/>	<input type="checkbox"/>	Only on <u>public</u> land
<input type="checkbox"/>	<input type="checkbox"/>	Not applicable (I did not hunt this season)

10. How often did you use the following hunting methods or equipment while turkey hunting in New York in 2012? (Check [✓] one response for each.)

	Frequency of use during your hunts in 2012			
Methods or Equipment	Never	Sometimes	Often	Every hunt
Hunting with a shotgun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunting with a handgun (firing shot pellets)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bow hunt for deer and <u>fall turkey</u> at the same time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hunt for other small game and <u>fall turkey</u> at the same time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. In which New York State (NYS) county did you spend the majority of your time hunting turkey during the 2012 spring and fall seasons? (If you do not know the county name, write in a city or village near where you hunted. If you did not hunt turkey during that season, write "NA".)

Turkey hunting season NYS County you hunted most often

Spring 2012 _____

Fall 2012 _____

YOUR VIEWS ON A SATISFYING FALL SEASON

The following questions will help turkey managers better understand the conditions that contribute to your satisfaction with the quality of fall turkey hunting experiences in New York.

(If you have never hunted turkey in the fall, skip to question 17.)

- 12. On a scale of 0 to 4, how important are the following conditions in determining your satisfaction with the quality of a fall turkey hunting experience in New York State? (0= "not important" and 4 = "very important". Check [✓] one box per line.)**

	<div style="display: flex; justify-content: space-between; width: 100%;"> Not important Very important </div>				
Fall hunting conditions:	0	1	2	3	4
Hearing/seeing turkey before or during fall season					
Hearing turkey in the fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seeing turkey flocks in the fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Seeing gobblers in the fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowing that friends/family are hearing or seeing turkey in fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Finding/seeing turkey sign (scratching, droppings, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Harvest success during fall season					
Bagging any turkey in the fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bagging a big turkey (either sex)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bagging a gobbler in the fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bagging 2 turkeys in the fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amount of effort needed to encounter a harvestable turkey in the fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contact with other hunters during fall season					
<i>Not seeing or encountering</i> other turkey hunters outside my group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Not seeing</i> or encountering deer or small game hunters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(12. continued)

	Not important					Very important				
Fall hunting conditions:	0	1	2	3	4	0	1	2	3	4
Turkey available for harvest										
Number of turkey available to hunt in the <u>fall</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of adult male turkeys (gobblers) available to hunt in the <u>fall</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The extent to which fall turkey harvest will <u>reduce</u> availability of gobblers next <u>spring</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunity to be in the field in the fall										
A season length that gives me plenty of opportunities to hunt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunity to take 2 turkeys in the <u>fall</u> (bag limit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A fall season that includes two or more weekends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opening fall season on a weekend vs. on a weekday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoiding overlap of fall turkey and bowhunting deer seasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoiding overlap of fall turkey and firearms deer seasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having access to places to hunt turkey on <u>private land</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having places to hunt fall turkey that are close to home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistency in fall regulations										
Consolidating the number of fall hunting zones (larger zones)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having the same bag limit across hunting zones in fall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having the fall season open on the same day in all hunting zones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avoiding fall regulation changes from year to year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having the fall season open on the same <u>specific date</u> every year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. In the table below, the items that you rated in the last question have been grouped into 6 broad categories. Please read the category descriptions, then RANK the categories from 1 to 6 according to how important they are in determining your satisfaction with the quality of a fall turkey hunting experience in New York State. (Give the most important category a rank of "1." Give the least important category a rank of "6." Then, assign a rank of 2 through 5 to the remaining categories. Use each number only once.)

Conditions that can affect satisfaction with the quality of <u>fall</u> turkey hunting in New York	Importance to you
How often I hear or see turkey (Hearing or seeing turkeys, or finding/seeing turkey sign before or during the fall season; knowing friends or family are seeing or hearing turkeys)	Rank: ____
My level of harvest success (Whether I bag any turkey, a gobbler, or 2 turkeys in the fall; amount of effort needed to encounter a harvestable turkey in the fall)	Rank: ____
Amount of contact I have with other hunters (Not seeing or encountering other hunters during fall turkey season)	Rank: ____
Number of turkey available for harvest (Number of turkeys and number of gobblers available in fall, the extent to which fall turkey harvest reduces availability of gobblers next spring)	Rank: ____
My overall opportunity to be in the field (Length of the fall season; the number of turkey I am allowed to take in fall; number of weekends in fall season; whether the fall season opens on a weekday or a weekend; overlap of fall turkey and deer hunting seasons; having access to private land for fall turkey hunting)	Rank: ____
Consistency/uniformity of turkey hunting regulations (Consolidating the number of hunting zones in fall; having same bag limit and opening the season on the same day in all zones; opening fall season on the same date every year; avoiding changes in fall hunting regulations from year-to-year)	Rank: ____

14. Please indicate the degree to which you were satisfied or dissatisfied with your fall turkey hunting experiences the last year that you hunted turkey in New York. (Check [☐] one box.)

- ☐ Very satisfied
- ☐ Moderately satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Moderately dissatisfied
- ☐ Very dissatisfied

15. How has your level of satisfaction with your fall turkey hunting experiences in New York changed over the last few years? (Check [☐] one box.)

- ☐ Increased greatly
- ☐ Increased moderately
- ☐ Stayed the same
- ☐ Decreased moderately
- ☐ Decreased greatly

16. How much did the following conditions contribute to changes in your level of satisfaction with fall turkey hunting over the last few years? (Check one box per line.)

	How much these conditions contributed to change in your satisfaction level				
Conditions that may influence hunting satisfaction	Not at all	Slightly	Moderately	Greatly	Unsure
Change in turkey hunting regulations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change in turkey numbers in the area where I hunt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change in my ability to get access to places where I can hunt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change in personal circumstances (e.g., free time, health, hunting skills, loss of hunting partners, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change in rate of encounters or conflicts with other hunters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change in the rate at which I encounter and have a chance to bag a turkey (i.e., harvest opportunities)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others (please list _____ _____ _____)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BACKGROUND INFORMATION

17. Do you belong to any national, state, or local organizations related to turkey hunting or turkey management?

- ☐ Yes
☐ No

THANK YOU FOR YOUR PARTICIPATION!

(Please use the space below to offer any comments you would like to make on turkey hunting in New York State.)

To return this questionnaire, simply seal it and drop it into the nearest mailbox. Postage has already been provided.

APPENDIX B (RESPONDENT – RESPONDENT COMPARISONS)

Table B1. Outcome of telephone contacts with survey nonrespondents.

Outcome	Geographic strata					Total
	Lake Plains	Long Island	Northern NY	South-eastern NY	Western NY	
Completed survey	50	50	50	50	50	250
Pending – Called less than 5 times without resolution	64	86	100	186	146	582
Inactive – Called 5 or more times without resolution	34	52	2	2	3	93
Phone number not in service, or incorrect	40	42	40	54	69	245
Incapable of responding (ill, language barrier)	2	3	0	1	0	6
Returned survey by mail	22	10	15	14	20	81
Refused to participate	0	2	1	2	2	7
Total	212	290	208	309	290	1264

Table B2. A comparison of mail survey respondents to a sample of 250 nonrespondents (interviewed by telephone after the mail survey was completed).

	Non-respondents			Respondents		
	n	Yes (%)	No (%)	n	Yes (%)	No (%)
Have hunted turkey in NY at some time	250	74.0	26.0	2384	72.7	27.3
Hunted turkey in NY in 2012	185	56.2	43.8	1734	74.2	25.8
Hunted turkey in spring 2012	104	82.7	17.3	1360	84.6	15.4
Hunted turkey in fall 2012	104	51.0	49.0	1333	63.7	36.3
Harvested turkey in NY	185	63.2	36.8	1732	67.3	32.7

Table B3. How level of satisfaction with fall turkey hunting has changed over the last few years, among New York State turkey hunters.

	Non-respondents		Respondents	
	n	%	n	%
Increased greatly/moderately	32	19.2	196	13.8
Stayed the same	93	55.7	833	58.6
Decreased greatly/moderately	42	25.1	392	27.6
Total	167	100.0	1421	100.0

Table B4. Degree to which 2012 New York turkey hunters were satisfied with their fall turkey hunting experiences in the last year hunted.

	Non-respondents		Respondents	
	n	%	n	%
Very/Moderately satisfied	106	65.0	585	40.9
Neither satisfied nor dissatisfied	30	18.4	556	38.9
Very/Moderately dissatisfied	27	16.6	289	20.2
Total	163	100.0	1430	100.0